



2823 JFW

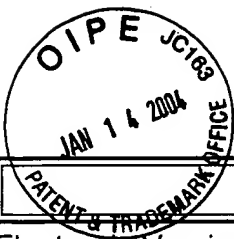
Electronic Filing System (EFS) Data  
Electronic Patent Application Submission  
USPTO Use Only

EFS ID: 53690  
Application ID: 09069668  
Title of Invention: BIPOLAR TRANSISTORS WITH  
LOW-RESISTANCE EMITTER  
CONTACTS  
First Named Inventor: Kie Ahn  
Domestic/Foreign Application: Domestic Application  
Filing Date: 1998-04-29  
Effective Receipt Date: 2004-01-14  
Submission Type: Information Disclosure  
Statement  
Filing Type:  
Confirmation number: 3628  
Attorney Docket Number: 303.466US1



Total Fees Authorized:


Digital Certificate Holder: cn=Janal M. Kalis,ou=Registered Attorneys,ou=Patent and Trademark  
Office,ou=Department of Commerce,o=U.S. Government,c=US  
Certificate Message Digest: ede8ddabf78319e4604a4b723195df626215d84d

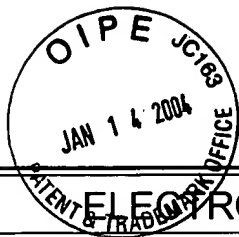


TRANSMITTAL

Electronic Version v1.1


Stylesheet Version v1.1.0

| Title of<br>Invention  | BIPOLAR TRANSISTORS WITH LOW-RESISTANCE EMITTER<br>CONTACTS |                |                           |             |                |   |               |            |  |            |
|--|---|----------------|---------------------------|-------------|----------------|---|---------------|------------|--|------------|
| Application Number: 09/069668    |   |                |                           |             |                |   |               |            |  |            |
| Date: 1998-04-29   |   |                |                           |             |                |   |               |            |  |            |
| First Named Applicant: Kie Ahn   |   |                |                           |             |                |   |               |            |  |            |
| Confirmation Number: 3628  |   |                |                           |             |                |   |               |            |  |            |
| Attorney Docket Number: 303.466US1   |   |                |                           |             |                |   |               |            |  |            |
| <p>I hereby certify that the use of this system is for OFFICIAL correspondence between patent applicants or their representatives and the USPTO. Fraudulent or other use besides the filing of official correspondence by authorized parties is strictly prohibited, and subject to a fine and/or imprisonment under applicable law.</p> <p>I, the undersigned, certify that I have viewed a display of document(s) being electronically submitted to the United States Patent and Trademark Office, using either the USPTO provided style sheet or software, and that this is the document(s) I intend for initiation or further prosecution of a patent application noted in the submission. This document(s) will become part of the official electronic record at the USPTO.</p> |   |                |                           |             |                |   |               |            |  |            |
| <table border="1"><thead><tr><th>Submitted by:</th><th>Elec. Sign.</th><th>Sign. Capacity</th></tr></thead><tbody><tr><td>Janal M. Kalis<br/>Registered Number: 37,650</td><td>/janal kalis/</td><td>Attorney</td></tr></tbody></table>  |   |                | Submitted by:             | Elec. Sign. | Sign. Capacity | Janal M. Kalis<br>Registered Number: 37,650 | /janal kalis/ | Attorney   |  |            |
| Submitted by:  | Elec. Sign.   | Sign. Capacity |                           |             |                |   |               |            |  |            |
| Janal M. Kalis<br>Registered Number: 37,650  | /janal kalis/   | Attorney       |                           |             |                |   |               |            |  |            |
| <table><tr><td>Documents being submitted</td><td>Files</td></tr><tr><td>us-ids</td><td>303.466US1-usidst.xml</td></tr><tr><td></td><td>us-ids.dtd</td></tr><tr><td></td><td>us-ids.xsl</td></tr></table>   |   |                | Documents being submitted | Files       | us-ids         | 303.466US1-usidst.xml                       |               | us-ids.dtd |  | us-ids.xsl |
| Documents being submitted  | Files   |                |                           |             |                |   |               |            |  |            |
| us-ids   | 303.466US1-usidst.xml                                       |                |                           |             |                |   |               |            |  |            |
|  | us-ids.dtd  |                |                           |             |                |   |               |            |  |            |
|  | us-ids.xsl  |                |                           |             |                |   |               |            |  |            |
| Comments   |   |                |                           |             |                |   |               |            |  |            |



ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18  
Stylesheet Version v18.0

| Title of<br>Invention   | BIPOLAR TRANSISTORS WITH LOW-RESISTANCE<br>EMITTER CONTACTS |            |            |                         |      |       |          |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|---|---|------------|------------|-------------------------|------|-------|----------|------|----------|------------|------|----------|------|-------|----------|--|---|---------|------------|-------------------------|--|-----|----|--|---|---------|------------|-------------|--|-----|-----|--|---|---------|------------|-----------------------|--|-----|----|--|---|---------|------------|-----------------|--|-----|----|--|---|---------|------------|------------------|--|-----|-----|--|---|---------|------------|-----------------|--|-----|-----|--|---|---------|------------|----------|--|-----|-----|--|---|---------|------------|--------------------|--|-----|----|
| <div>Application Number: 09/069668</div> <div>Confirmation Number: 3628</div> <div>First Named Applicant: Kie Ahn</div> <div>Attorney Docket Number: 303.466US1</div> <div>Art Unit: 2823</div> <div>Examiner: W. Coleman</div> <div>Search string: ( 3932226 or 4169000 or 4442449 or 4670297<br/>or 4855252 or 4857481 or 4959705 or 5040049<br/>or 5148260 or 5158986 or 5187560 or 5241193<br/>or 5268315 or 5308440 or 5334356 or 5391911<br/>or 5454928 or 5458702 or 5501645 or 5516724<br/>or 5516745 or 5539227 or 5563448 or 5593921<br/>or 5705425 or 5710454 or 5753967 or 5757072<br/>or 5796151 or 5796166 or 5798544 or 5798559<br/>or 5847439 or 5861340 or 5891797 or 5920121<br/>or 5925918 or 5925933 or 5930596 or 5930668<br/>or 5942799 or 5960313 or 5989718 or 6025261<br/>or 6080646 or 6150252 or 6157082 or 6180509<br/>or 6211562 or 6245663 or 6265602 or<br/>6271551 ).pn.</div> <div></div>   |   |            |            |                         |      |       |          |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
| <h3>US Patent Documents</h3> <p>Note: Applicant is not required to submit a paper copy of cited US Patent Documents</p> <table border="1"><thead><tr><th>init</th><th>Cite.No.</th><th>Patent No.</th><th>Date</th><th>Patentee</th><th>Kind</th><th>Class</th><th>Subclass</th></tr></thead><tbody><tr><td></td><td>1</td><td>3932226</td><td>1976-01-13</td><td>Klatskin, J. B., et al.</td><td></td><td>204</td><td>16</td></tr><tr><td></td><td>2</td><td>4169000</td><td>1979-09-25</td><td>Riseman, J.</td><td></td><td>148</td><td>187</td></tr><tr><td></td><td>3</td><td>4442449</td><td>1984-04-10</td><td>Lehrer, W. I., et al.</td><td></td><td>357</td><td>67</td></tr><tr><td></td><td>4</td><td>4670297</td><td>1987-06-02</td><td>Lee, K., et al.</td><td></td><td>427</td><td>91</td></tr><tr><td></td><td>5</td><td>4855252</td><td>1989-08-08</td><td>Peterman, Steven</td><td></td><td>437</td><td>189</td></tr><tr><td></td><td>6</td><td>4857481</td><td>1989-08-15</td><td>Tam, G., et al.</td><td></td><td>437</td><td>182</td></tr><tr><td></td><td>7</td><td>4959705</td><td>1990-09-25</td><td>Lemnios,</td><td></td><td>257</td><td>522</td></tr><tr><td></td><td>8</td><td>5040049</td><td>1991-08-13</td><td>Raaijmakers, I. J.</td><td></td><td>357</td><td>71</td></tr></tbody></table> |   |            |            |                         |      |       |          | init | Cite.No. | Patent No. | Date | Patentee | Kind | Class | Subclass |  | 1 | 3932226 | 1976-01-13 | Klatskin, J. B., et al. |  | 204 | 16 |  | 2 | 4169000 | 1979-09-25 | Riseman, J. |  | 148 | 187 |  | 3 | 4442449 | 1984-04-10 | Lehrer, W. I., et al. |  | 357 | 67 |  | 4 | 4670297 | 1987-06-02 | Lee, K., et al. |  | 427 | 91 |  | 5 | 4855252 | 1989-08-08 | Peterman, Steven |  | 437 | 189 |  | 6 | 4857481 | 1989-08-15 | Tam, G., et al. |  | 437 | 182 |  | 7 | 4959705 | 1990-09-25 | Lemnios, |  | 257 | 522 |  | 8 | 5040049 | 1991-08-13 | Raaijmakers, I. J. |  | 357 | 71 |
| init  | Cite.No.  | Patent No. | Date       | Patentee                | Kind | Class | Subclass |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|   | 1   | 3932226    | 1976-01-13 | Klatskin, J. B., et al. |      | 204   | 16       |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|   | 2   | 4169000    | 1979-09-25 | Riseman, J.             |      | 148   | 187      |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|   | 3   | 4442449    | 1984-04-10 | Lehrer, W. I., et al.   |      | 357   | 67       |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|   | 4   | 4670297    | 1987-06-02 | Lee, K., et al.         |      | 427   | 91       |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|   | 5   | 4855252    | 1989-08-08 | Peterman, Steven        |      | 437   | 189      |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|   | 6   | 4857481    | 1989-08-15 | Tam, G., et al.         |      | 437   | 182      |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|   | 7   | 4959705    | 1990-09-25 | Lemnios,                |      | 257   | 522      |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |
|   | 8   | 5040049    | 1991-08-13 | Raaijmakers, I. J.      |      | 357   | 71       |      |          |            |      |          |      |       |          |  |   |         |            |                         |  |     |    |  |   |         |            |             |  |     |     |  |   |         |            |                       |  |     |    |  |   |         |            |                 |  |     |    |  |   |         |            |                  |  |     |     |  |   |         |            |                 |  |     |     |  |   |         |            |          |  |     |     |  |   |         |            |                    |  |     |    |

|  |    |         |            |                            |
|--|----|---------|------------|----------------------------|
|  | 9  | 5148260 | 1992-09-15 | Inoue, T. , et al.         |
|  | 10 | 5158986 | 1992-10-27 | Cha, S. W., et al.         |
|  | 11 | 5187560 | 1993-02-16 | Yoshida, , et al.          |
|  | 12 | 5241193 | 1993-08-31 | Pfiester, J.R. , et al.    |
|  | 13 | 5268315 | 1993-12-07 | Prasad, J. S., et al.      |
|  | 14 | 5308440 | 1994-05-03 | Chino, T. , et al.         |
|  | 15 | 5334356 | 1994-08-02 | Baldwin, D. F., et al.     |
|  | 16 | 5391911 | 1995-02-21 | Beyer, K. D., et al.       |
|  | 17 | 5454928 | 1995-10-03 | Rogers, , et al.           |
|  | 18 | 5458702 | 1995-10-17 | Ono, Y. , et al.           |
|  | 19 | 5501645 | 1996-03-26 | Taniguchi, , et al.        |
|  | 20 | 5516724 | 1996-05-14 | Ast, D. E., et al.         |
|  | 21 | 5516745 | 1996-05-14 | Friesen, D. T., et al.     |
|  | 22 | 5539227 | 1996-07-23 | Nakano, H.                 |
|  | 23 | 5563448 | 1996-10-08 | Lee, Sangin , et al.       |
|  | 24 | 5593921 | 1997-01-14 | Chen F. E. , et al.        |
|  | 25 | 5705425 | 1998-01-06 | Miura, T. , et al.         |
|  | 26 | 5710454 | 1998-01-20 | Wu, S. L.                  |
|  | 27 | 5753967 | 1998-05-19 | Lin, Ming-Ren              |
|  | 28 | 5757072 | 1998-05-26 | Gorowitz, Bernard , et al. |
|  | 29 | 5796151 | 1998-08-18 | Hsu, W. , et al.           |
|  | 30 | 5796166 | 1998-08-18 | Agnello, P. D., et al.     |
|  | 31 | 5798544 | 1998-08-25 | Ohya, S. , et al.          |
|  | 32 | 5798559 | 1998-08-25 | Bothra, Subhas , et al.    |
|  | 33 | 5847439 | 1998-12-08 | Reinberg, A. R.            |
|  | 34 | 5861340 | 1999-01-19 | Bai, G. , et al.           |
|  | 35 | 5891797 | 1999-04-06 | Farrar, P. A.              |
|  | 36 | 5920121 | 1999-07-06 | Forbes, , et al.           |
|  | 37 | 5925918 | 1999-07-20 | Wu, Zhiqiang , et al.      |
|  | 38 | 5925933 | 1999-07-20 | Colgan, E. G., et al.      |
|  | 39 | 5930596 | 1999-07-27 | Klose, H. , et al.         |
|  | 40 | 5930668 | 1999-07-27 | Gardner, D. S.             |
|  | 41 | 5942799 | 1999-08-24 | Danek, M. , et al.         |
|  | 42 | 5960313 | 1999-09-28 | Jun, Y. K.                 |
|  | 43 | 5989718 | 1999-11-23 | Smith, K.W. , et al.       |
|  | 44 | 6025261 | 2000-02-15 | Farrar, C. , et al.        |

|     |     |
|-----|-----|
| 357 | 67  |
| 521 | 82  |
| 257 | 743 |
| 257 | 67  |
| 437 | 31  |
| 156 | 664 |
| 422 | 133 |
| 257 | 522 |
| 205 | 125 |
| 148 | 432 |
| 477 | 130 |
| 437 | 160 |
| 502 | 401 |
| 257 | 276 |
| 257 | 742 |
| 437 | 195 |
| 437 | 182 |
| 257 | 413 |
| 257 | 635 |
| 257 | 700 |
| 257 | 410 |
| 257 | 751 |
| 257 | 296 |
| 257 | 522 |
| 257 | 522 |
| 438 | 592 |
| 438 | 619 |
| 257 | 742 |
| 257 | 413 |
| 257 | 762 |
| 438 | 98  |
| 438 | 624 |
| 257 | 751 |
| 438 | 624 |
| 428 | 446 |
| 438 | 619 |

|  |    |         |            |                            |     |     |
|--|----|---------|------------|----------------------------|-----|-----|
|  | 45 | 6080646 | 2000-06-27 | Wang, K.                   | 438 | 585 |
|  | 46 | 6150252 | 2000-11-21 | Hsu, Wei-Yung , et al.     | 438 | 597 |
|  | 47 | 6157082 | 2000-12-05 | Merchant, S. M., et al.    | 257 | 758 |
|  | 48 | 6180509 | 2001-01-30 | Huang, Kuei-Wu , et al.    | 438 | 624 |
|  | 49 | 6211562 | 2001-04-03 | Forbes, L. , et al.        | 257 | 581 |
|  | 50 | 6245663 | 2001-06-12 | Zhao, B. , et al.          |     |     |
|  | 51 | 6265602 | 2001-07-24 | Voit, G. , et al.          | 558 | 459 |
|  | 52 | 6271551 | 2001-08-07 | Schmitz, Jurriann , et al. | 257 | 288 |

Signature

|               |      |
|---------------|------|
| Examiner Name | Date |
|               |      |